WHAT IS CLAIMED IS:

1. Apparatus for transmitting data on radio waves between a master and at least one slave and controlling a rate of packet data transmitted between the master and the at least one slave adaptively to quality of an radio frequency (RF) channel, comprising:

a controller for controlling error detection in packet data transmitted on the radio waves;

a quality determining section for determining the quality of the packet data transmitted on a basis of an error detected; and

a command generator responsive to a result from determination of the quality of the packet data for generating a command indicating an alteration of a sort of the packet data to send out the command toward a source party having transmitted the packet data.

2. The apparatus in accordance with claim 1, further comprising an altering section responsive to the command generated for altering the sort of packet data in complying with the command.

3. The apparatus in accordance with claim 2, wherein said controller controls a start and an end of the error detection as well as measurement of the error detection in a period of detection time represented by a total number of slots accumulated in respect of the packet data supplied.

4. The apparatus in accordance with claim 3, wherein said quality determining section compares the total number of slots obtained in the period of detection time with a predetermined, first threshold defining deterioration of the packet data during transmission to determine, upon the total number of slots detected equal to or exceeding the first

threshold, the deterioration of the packet data;

said quality determining section comparing the total number of slots with a predetermined, second threshold defining improvement of the packet data during transmission to determine, upon the total number of slots detected not exceeding the second threshold, the improvement of the packet data;

said quality determining section providing said command generator with a result from determination on the deterioration and improvement of the quality.

5. The apparatus in accordance with claim 4, wherein said command generator is responsive to the result from the determination to generate a command instructing the source party to alter a type of packet and send out the command toward the source party.

6. The apparatus in accordance with claim 5, wherein said command generator has a plurality of the first thresholds set which are different from each other and a plurality of the second thresholds set which are different from each other,

the determination being made in respect of the plurality of first thresholds and the plurality of second thresholds to allow a size of the packet data to change adaptively to the determination of worst quality and best quality of the packet data on transmission into a shorter size and a longer size, respectively, than a size set presently.

7. The apparatus in accordance with claim 5, wherein said altering section compares, when said apparatus works as the source party, the command supplied from the slave with the type of packet presently set to determine whether or not error correction is to be attached to packet data to be transmitted, and controls the transmission of the packet data in accordance with a result from determination.

8. The apparatus in accordance with claim 6, wherein said altering section determines whether or not error correction is to be attached to packet data to be transmitted and whether or not the size of the packet data is to be altered, and controls the transmission of the packet data in accordance with a result from determination.

9. A method of transmitting data on radio waves between a master and at least one slave, comprising:

a first step of establishing a connection between the master and the at least one slave;

a second step of transmitting, following said first step, from the master to the at least one slave a first command setting to a predetermined value a rate of the packet data according to a link manager protocol regulated in Bluetooth;

a third step of receiving the first command by the at least one slave;

a fourth step of starting, upon having received the first command, detecting an error;

a fifth step of transmitting, following said fourth step, purely the packet data from the master to the at least one slave;

a sixth step of measuring an accumulated number of errors detected in a period of time for detecting an error as a total number of slots for reception error, where a length of the packet data received by the at least one slave is represented by a number of slots, the period of time being set as an accumulated number of slots;

a seventh step of comparing the total number of slots of reception error with a predetermined, first threshold defining deterioration of the packet data on transmission to determine the deterioration of quality of the packet data in dependence upon whether or not the total number of slots is

detected equal to or exceeding the first threshold;

an eight step of instructing, in dependence upon a result from determination of the deterioration, the master from the at least one slave to alter a type of packet;

a ninth step of determining whether or not an error correction code is to be attached to the type of packet presently set in response to alteration of the type of packet; and

a tenth step of controlling alteration of the type of packet in the packet data to be transmitted from the master to the at least one slave,

whereby a rate of packet data transmitted between the master and the at least one slave is controlled adaptively to quality of an radio frequency (RF) channel.

10. The method in accordance with claim 9, wherein said seventh step additionally determines, when having determined the deterioration of the quality of the packet data, a further deterioration of the quality of the packet data in dependence upon whether or not the total number of slots is determined equal to or exceeding a predetermined, second threshold which is higher than the first threshold.

11. The method in accordance with claim 10, wherein said eighth step generates, when having determined the deterioration of the quality in terms of the total number of slots of reception error exclusively with respect to the first threshold, a second command instructing attachment of the error correction code in the type of packet, and generates, when the total number of slots is measured equal to or exceeding the second threshold, a third command instructing the attachment of the error correction code and the alteration of the type of packet including setting of a shorter size of packet than the type of packet presently set.

12. The method in accordance with claim 11, wherein said tenth step controls the attachment of the error correction code in response to the second command, and controls, in response to the third command, the attachment of the error correction code and shortening of the size of packet to transmit the packet data.

13. The method in accordance with claim 9, further comprising:

an eleventh step of comparing, following said tenth step, the total number of slots of reception error in the at least one slave with a predetermined, third threshold defining improvement in the transmission of the packet data, to determine the improvement of the quality of the packet data in dependence upon whether or not the total number of slots is detected equal to or below the third threshold;

a twelfth step of instructing the alteration of the type of packet to be transmitted from the at least one slave in accordance with the determination of the improvement of the quality;

a thirteenth step of determining, in response to the alteration of the type of packet, whether or not to inhibit the error detection code from being attached to the type of packet presently set; and

a fourteenth step of controlling the alteration of the type of packet for the packet data to be transmitted from the master to the at least one slave in accordance with a result from determination in said thirteenth step.

14. The method in accordance with claim 13, wherein said tenth step additionally determines, when having determined the improvement of the quality of the packet data, a further improvement of the quality of the packet data in dependence upon whether or not the total number of slots is detected equal

to or below a predetermined, fourth threshold which is lower than the third threshold.

15. The method in accordance with claim 13, wherein said twelfth step generates, when having determined the improvement of the quality in terms of the total number of slots of reception error exclusively with respect to the third threshold, a fourth command instructing inhibition of the error correction code from being attached in the type of packet, and generates, when the total number of slots is measured not exceeding the fourth threshold, a fifth command instructing the inhibition of the error correction code from being attached and the alteration of the type of packet including setting of a longer size of packet than the type of packet presently set.

16. The method in accordance with claim 14, wherein said twelfth step generates, when having determined the improvement of the quality in terms of the total number of slots of reception error exclusively with respect to the third threshold, a fourth command instructing inhibition of the error correction code from being attached in the type of packet, and generates, when the total number of slots is measured not exceeding the fourth threshold, a fifth command instructing the inhibition of the error correction code from being attached and the alteration of the type of packet including setting of a longer size of packet than the type of packet presently set.

17. The method in accordance with claim 13, wherein said fourteenth step controls inhibition of the error correction code from being attached in response to the fourth command, and controls, in response to the fifth command, the inhibition of the error correction code from being attached and lengthening of the size of packet to transmit the packet data.

18. The method in accordance with claim 16, wherein said fourteenth step controls inhibition of the error correction code from being attached in response to the fourth command, and controls, in response to the fifth command, the inhibition of the error correction code from being attached and lengthening of the size of packet to transmit the packet data.

19. A method of transmitting data on radio waves between a master and at least one slave, comprising:

a first step of establishing a connection between the master and the at least one slave;

a second step of transmitting, following said first step, from the master to the at least one slave a first command setting to a predetermined value a rate of the packet data according to a link manager protocol regulated in Bluetooth;

a third step of receiving the first command by the at least one slave;

a fourth step of starting, upon having received the first command, detecting an error;

a fifth step of transmitting, following said fourth step, purely the packet data from the master to the at least one slave;

a sixth step of measuring an accumulated number of errors detected in a period of time for detecting error as a total number of slots for reception error, where a length of the packet data received by the at least one slave is represented by a number of slots, the period of time being set as an accumulated number of slots;

a seventh step of comparing, when an error correction code has been attached to the packet data by the at least one slave, the total number of slots of reception error with a predetermined, first threshold defining improvement of the packet data on transmission to determine the improvement of quality of the packet data in dependence upon whether or not

the total number of slots is detected equal to or below the first threshold;

an eight step of instructing, in dependence upon a result from determination of the improvement, the master from the at least one slave to alter a type of packet;

a ninth step of determining whether or not an error correction code is to be inhibited from being attached to the type of packet presently set in response to alteration of the type of packet; and

a tenth step of controlling alteration of the type of packet in the packet data to be transmitted from the master to the at least one slave,

whereby a rate of packet data transmitted between the master and the at least one slave is controlled adaptively to quality of an radio frequency (RF) channel.

20. The method in accordance with claim 19, wherein said seventh step additionally determines, when having determined the improvement of the quality of the packet data, a further improvement of the quality of the packet data in dependence upon whether or not the total number of slots is determined equal to or below a predetermined, second threshold which is higher than the first threshold.

21. The method in accordance with claim 20, wherein said eighth step generates, when having determined the improvement of the quality in terms of the total number of slots of reception error exclusively with respect to the first threshold, a second command instructing inhibition of the error correction code from being attached in the type of packet, and generates, when the total number of slots is measured equal to or below the second threshold, a third command instructing the inhibition of the error correction code from being attached and the alteration of the type of packet including setting of

a longer size of packet than the type of packet presently set.

22. The method in accordance with claim 21, wherein said tenth step controls inhibition of the error correction code from being attached in response to the second command, and controls, in response to the third command, the inhibition of the error correction code from being attached and lengthening of the size of packet to transmit the packet data.